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(54) PIEZOELECTRIC ELEMENT MATERIAL AND ITS PRODUCTION

(57) Abstract:

PURPOSE: To enable sintering even at a low temp. by using Pb-contg. ceramics having a specified average grain size and a specified grain size distribution and to obtain a piezoelectric element material having improved piezoelectric characteristics of piezoelectric ceramics by controlling the fine structure of the Pb-contg. ceramics.

CONSTITUTION: This piezoelectric element material contains Pb-contg. ceramics having 0.5-5 μ m average grain size and a grain size distribution in which \geq 90wt.% grains are within the range of 0.5-5 μ m. The basic compsn. of this material is preferably represented by the general formula $Pb_{1-x}Sr_x(Mg_{1/3}Nb_{2/3})_aTi_bZr_cO_3$ (where $a+b+c=1$, $0.20 \leq a \leq 0.30$, $0.30 \leq b \leq 0.45$, $0.30 \leq c \leq 0.40$ and $0.01 \leq x \leq 0.20$) and $0.01\text{--}0.2\text{wt.\%}$ Fe_2O_3 is preferably added to the basic compsn.

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